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REMARKS

Claims 1-22 remain pending in the application. No amendments thereto are submitted herewith. Reconsideration of the application is respectfully requested in view of the following remarks.

The Office Action rejected the claims on two grounds. The first ground was lack of written description under 35 USC § 112, first paragraph. The second ground was anticipation under 35 USC § 102(e) by U.S. Patent 6,015,214 (Heenan et al.).

Written Description

The Office Action rejected claims 1-3 on the basis that the original disclosure (and FIG. 9) lacks support for "rectangular cube corner elements". The Office Action rejected claim 4 on the basis that the original disclosure lacks support for the claimed feature. The Office Action rejected claims 5-22 on the basis that the original disclosure lacks support for each of the features in each of these claims.

Applicant respectfully traverses.

The written description requirement of §112 requires an applicant to disclose descriptive means, such as "words, structures, figures, diagrams, formulas, etc.," allowing one skilled in the art to "reasonably discern the limitation at issue in the claims." *Crown Operations Int'l, Ltd. v. Solutia Inc.*, 289 F.3d 1367, 1376 (Fed. Cir. 2002) (internal citations omitted). The law has been interpreted to require a finding of "sufficient information in the original disclosure to show that the inventor possessed the invention at the time of the original filing," in the view of a person of skill in the art. *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1320 (Fed. Cir. 2003). Whether the applicant's description evidences possession of the invention is evaluated "from the viewpoint of one skilled in the art." *Id.* See also *Amgen v. Hoescht Marion Roussel, Inc.*, 314 F.3d 1313, 1332 (Fed. Cir. 2003) ("the claim terms at issue here are not new or unknown biological materials that ordinarily skilled artisans would easily miscomprehend.")

The written description requirement mandates no particular form of disclosure, but focuses on whether one of skill in the art "could determine from the specification that the inventor possessed the invention at the time of filing." *Moba*, 325 F.3d at 1321 (finding substantial evidence supported jury's finding, as specification described the elements of the claim

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in sufficient detail for a person of ordinary skill to recognize possession). For example, drawings fulfill the written description requirement when they "describe what is claimed and convey to those of skill in the art that the patentee actually invented what is claimed." *Cooper Cameron Corp. v. Kvaerner Oilfield Products, Inc.*, 291 F.3d 1317, 1322 (Fed. Cir. 2002) (reversing summary judgment of invalidity where drawings supported claim); *Wang Labs. Inc. v. Toshiba Corp.*, 993 F.2d 858, 866 (Fed. Cir. 1993) (finding testimony describing what figure would show to one of skill in the art supported finding of adequate written description).

Moreover, the specification does not need to describe the invention in exactly the same terms as the claims. *All Dental Prodx, LLC v. Advantage Dental Prod., Inc.*, 309 F.3d 774, 779 (Fed. Cir. 2002) (specification's lack of *in haec verba* support of "unidentified mass" of raw material did not violate §112, where applicant claimed method for heating thermoplastic material). Even failing to specifically mention a limitation that later appears in the claims is not fatal, so long as one skilled in the art would recognize that the new language finds support in the specification. *Id.*

Inventors may claim their inventions in more than one way, provided the specification supports the claims. *Cooper Cameron*, 291 F.3d at 1323 (Fed. Cir. 2002) (drawings supported claims, even though they recited invention in a manner that differed from the text of the written description). The specification is not limited to particular descriptions found in its text, if it supports other ways of claiming the invention. *Id.* (dismissing arguments that configuration described in text was "essential to the invention").

In light of the above, it is respectfully submitted that the present claims are in full compliance with the written description requirement of 35 U.S.C. § 112, first paragraph.

Claims 1-3 each include the recitation "rectangular cube corner elements". Such cube corner elements are taught at least in connection with FIG. 9 and accompanying description found in the original disclosure. In this regard, "original disclosure" refers to U.S. Application Serial No. 08/887,074, filed July 2, 1997, which is the grandparent to the present application by a chain of two continuations. For convenience, however, reference will be made herein to pages and line numbers of the present application (Application Serial No. 10/757,127, filed Jan. 14, 2004) rather than to the grandparent '074 application, but it is understood that the very same teachings appear in the parent application and in the grandparent '074 application.

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Cube corner elements disclosed in connection with FIG. 9 are each seen to have a "left", "right", "top", and "bottom" boundary or border. (The terms are in quotation marks are used in this Response as an informal way of describing features of the cube corner elements plainly visible when viewing FIG. 9 in a standard orientation.) As will be explained in more detail in the paragraph that follows, the specification teaches embodiments in which: (a) the top and bottom borders are parallel to each other; (b) the left and right borders are parallel to each other; and (c) the top and bottom borders are perpendicular to the left and right borders. The specification also teaches that the top/bottom borders can have a dimension that is different than that of the left/right borders. Hence, the present application and the original disclosure clearly teach rectangular cube corner elements.

The cube corner elements in the plan view of FIG. 9 can be seen to have left and right borders that correspond to the major surfaces 12,14 of the particular lamina in which they are formed. See also FIGS. 1-3. The specification teaches at page 11 lines 17-18 that in "one embodiment, lamina 10 can be a right rectangular polyhedron wherein opposing surfaces are substantially parallel." Thus, one of ordinary skill would understand that major surfaces 12,14 of the laminae, and thus the left and right borders of each of the cube corner elements of FIG. 9, can be parallel to each other. Inspection of FIG. 9 also shows that the top and bottom borders of the cube corner elements correspond to the groove vertices of the "first groove set" formed in connection with FIGS. 4-5. According to the specification at page 13 line 8 and following, the first groove set comprises "a plurality of parallel adjacent V-shaped grooves 30a, 30b, 30c, etc.", with groove surfaces intersecting to form groove vertices 33b, 33c, 33d, etc. One of ordinary skill would therefore understand that the groove vertices, and thus the top and bottom borders of each of the cube corner elements of FIG. 9, can be parallel to each other. The specification further teaches at page 14 lines 10-14 that

"grooves 30 are formed such that the respective reference edges 36 are disposed in a plane that intersects the respective first reference planes 24 and the second reference plane 26 at orthogonal angles. Thus, in a top plan view the respective first reference edges 36 would appear perpendicular to the respective first reference planes 24 of the laminae 10."

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From this the person of ordinary skill would understand that the top and bottom borders of each of the cube corner elements of FIG. 9 can be perpendicular to the left and right borders of the cube corner elements. (Note also from page 11 lines 2-3 of the specification that reference plane 24 is centered between the first and second major surfaces 12,14 of a lamina.) Finally, the different ranges given for the preferred spacing of groove vertices 33 (see page 13 lines 21-23) compared to the preferred lamina thickness (see page 24 lines 15-18) plainly teach the person of ordinary skill that the left-to-right dimension can be different from the top-to-bottom dimension for the cube corner elements of FIG. 9.

In view of the foregoing, the rejection of claims 1-3 for lack of written description of "rectangular cube corner elements" cannot be sustained. Withdrawal of the rejection is respectfully requested.

Claim 4 recites that the plurality of laminae define in the working surfaces thereof "a nonrulable array of cube corner elements". Applicant traverses the assertion in the Office Action that original disclosure does not support this feature. The original disclosure teaches this feature in connection with FIG. 9 and other figures of the specification.

As explained above, it is not necessary that the original disclosure contain the exact term used in the claim, so long as one of ordinary skill could determine from a review of the specification that the inventor had possession of the invention as claimed. Instead of using terms like "nonrulable" or "rulable", the original disclosure uses "direct machining techniques". The specification makes clear (and the person of ordinary skill would immediately understand) that cube corner arrays such as that shown in FIG. 9 cannot be made using ordinary "direct machining techniques". Page 4 of the specification beginning at about line 9 compares pin-bundling, direct machining, and laminate techniques for making a master mold. In the paragraph beginning at line 19 of page 4, the specification teaches that cube corner geometries that have very high effective apertures at low entrance angles cannot be made with present direct machining techniques, in which "a series of grooves are formed in a unitary substrate to form a cube-corner retroreflective surface". At the same time, the specification teaches that the disclosed cube corner arrays can exhibit retroreflective efficiency and a maximum effective aperture approaching 100%. See e.g. p. 5 lines 15-24 and p. 24 lines 1-10. Hence, the person of ordinary skill would understand from the original disclosure that the cube corner element array of, for

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example, FIG. 9 "cannot be made" with "direct machining techniques", and that the array is therefore "unrulable". The rejection of claim 4 as lacking written description for the claimed feature cannot be sustained, and should be withdrawn.

Claims 5-22 were also rejected on the basis of 35 U.S.C. § 112, first paragraph. The Office Action, however, rejected these claims with the sweeping statement "nowhere in the original disclosure is there a support for *each of the features* recited in *each of the claims 5-22*" (emphasis added). Applicant respectfully traverses the rejection. Support for the features of these remaining claims is explained in the table provided below, where, again, reference is made to pages and line numbers of the present specification but have counterparts in the parent and grandparent priority applications.

<u>Applicant's Claims</u>	<u>Representative Support in the Present Specification</u>
5. An article comprising an array of microcubes,	Arrays of cube corner elements are shown and described in connection with many of the figures, including FIG. 9. Dimensions are discussed e.g. at p. 5 lines 19-21, p. 7 lines 1-3, p. 13 lines 21-23, p. 24 lines 15-19.
such that for every plane in space there are two adjacent microcubes for which at the place of adjacency none of the face edges is parallel to that plane,	This perplexing terminology is believed to be supported by disclosed cube corner arrays, such as the particular embodiment shown in FIGS. 8-9.
and in which at least one microcube of said array is rectangular,	See above discussion regarding "rectangular cube corner elements".
said at least one microcube of said array being canted face-more-parallel.	See e.g. p. 13, lines 3-7. The recited ranges for the angle θ_1 include angles greater than 35.26° , which will produce cube corner elements that are canted face-more-parallel.

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6. The article of claim 5 in which at least one microcube of said array has a plane of symmetry in which lies the cube axis of said microcube, thereby increasing the entrance angularity of said array in a plane perpendicular to said plane of symmetry.	See e.g. FIGS. 19-26 and associated description, and particularly p. 24 lines 7-10.
7. An article comprising an array of microcubes,	(see above)
such that for every plane in space there are two adjacent microcubes for which at the place of adjacency none of the face edges is parallel to that plane,	(see above)
in which at least one of said microcube shape is rectangular,	(see above)
and in which at least one face of said rectangular microcube is pentagonal.	See e.g. items 48a,b,c and 50 a,b,c in FIG. 9.
8. An article comprising an array of microcubes	(see above)
in which every three by three subarray of microcubes is nonrulable,	(see above discussion of "unrulable" and, e.g., FIG. 9 or FIG. 17)
and in which at least one microcube in a said three by three subarray of microcubes is rectangular,	(see above discussion regarding "rectangular")
said at least one microcube being canted face-more-parallel.	(see above)
9. The article of claim 8 in which at least one microcube of said array has a plane of symmetry in which lies the cube axis with said microcube, thereby increasing the entrance angularity of said array in a plane perpendicular to said plane of symmetry.	(see above)
10. The article of any of claims 1-4, wherein the rectangular cube corner elements are canted face-more-parallel.	(see above)

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11. The article of any of claims 1-4, wherein the rectangular cube corner elements each comprise a pentagonal face. (see above)

12. The article of any of claims 1-4, wherein the rectangular cube corner elements are microcubes. (see above)

13. The article of any of claims 5-9, wherein the article comprises a plurality of laminae See e.g. FIG. 9 and accompanying description.

and wherein the microcubes in the array are formed in rows of rectangular cube corner elements on working surfaces of the laminae. See e.g. FIG. 9 and accompanying description.

14. The article of claim 1, wherein the array of nonrutable cube corner elements comprises an array of microcubes. (see above)

15. The article of claim 14, wherein for every plane in space there are two adjacent microcubes for which at the place of adjacency none of the face edges is parallel to that plane. (see above)

16. The article of claim 15, wherein at least one microcube of said array of microcubes is rectangular and canted face-more-parallel. (see above)

17. The article of claim 16, in which at least one microcube of said array of microcubes has a plane of symmetry in which lies the cube axis of said microcube, thereby increasing the entrance angularity of said array of microcubes in a plane perpendicular to said plane of symmetry. (see above)

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18. The article of claim 15, wherein at least one of (see above) said microcube shape is rectangular, and in which at least one face of said rectangular microcube is pentagonal.

19. The article of claim 14, wherein every three by (see above) three subarray of microcubes is nonrutable.

20. The article of claim 19, wherein at least one (see above) microcube in a said three by three subarray of microcubes is rectangular.

21. The article of claim 20, wherein said at least (see above) one microcube is canted face-more-parallel.

22. The article of claim 21, wherein at least one (see above) microcube of said array has a plane of symmetry in which lies the cube axis with said microcube, thereby increasing the entrance angularity of said array in a plane perpendicular to said plane of symmetry.

Anticipation

The Office Action also rejected claims 1-22 as anticipated (under 35 USC § 102(e)) by '214 Heenan et al. These claims, however, were copied either identically or substantially from the '214 Heenan et al. reference. Upon the resolution of the 35 USC § 112 first paragraph rejections discussed above, Applicant intends to submit an appropriate showing pursuant to 37 CFR § 41.202 so that an interference can be declared.

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CONCLUSION

Applicant submits that the pending claims 1-22 conform to the written description requirement of 35 USC § 112, first paragraph, and that the rejection should be withdrawn.

If the Examiner should have any further questions or comments relating to the foregoing, which questions or comments could be readily resolved or discussed in an interview setting, he is respectfully requested to consider contacting the undersigned to arrange such an interview so that the prosecution of the present application can be timely advanced.

Beyond the fees authorized in connection with the above extension of time and the accompanying Request for Continued Examination (RCE), no further fee is believed to be due. If this belief is in error, please charge any additional required fee to Deposit Account No. 13-3723.

Respectfully submitted,

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Date

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